



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D6020-160
Job Sheet 141824



Part No: D6020-160

Job Qty: 14 ea

Part Name: Crosstube Material



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 11/15/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV pa3

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
110	Purchasing	14 pcs	11/15/17	0.00	0.00	Purchasing	AT 18/08/17
120	Packaging	14 pcs	11/15/17	0.00	0.00	Packaging2	AT 18/08/17
130	QC	14 pcs	11/15/17	0.00	0.00	QC6	9-89 AT 18/08/17
140	Outsource	14 pcs	11/15/17	0.00	0.00	Outsource1	
150	Packaging	14 pcs	11/15/17	0.00	0.00	Packaging2	
160	QC	14 pcs	11/15/17	0.00	0.00	QC6	
190	Packaging	14 pcs	11/15/17	0.00	0.00	Packaging3	028/20/18
200	QC21-SA	14 Ea	11/15/17	0.00	0.00	QC21	DAS 21 9-89 AUG 20 2018

Part Op 110 - Issue P/O: _____ Manufacture as per dwg D6020

Descriptions: 120 - Ensure material certification is attached

130 - Ensure Material certification comply to Dwg

140 - Issue p/o: _____ Ensure Material certification

150 - Ensure Material certification

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
110-Purchasing	D6020-160P	14	0	0	0

5103319

Part Specifications

Specifications could not be found.

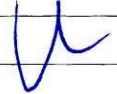
Work Order ID 141824

Wednesday, February 17, 2016 7:36:27 AM

141824

Page 1

Item ID: D6020-160 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Crosstube Material
Start Date: 2/17/2016 Start Qty: 14.00 ***14*** Cust Item ID:
Required Date: 9/1/2016 Req'd Qty: 14.00 ***14*** Customer:
Reference:

Approvals: Process Plan:  Date: FEB 17 2016 Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6020	pa3								
110	PURCHASING	0.00							
110									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 31388								
	Manufacture as per dwg D6020								
120	Receive & Inspect for Damage & Mat'l Certs	0.00							
120									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
130	QC6- Inspect dimensions to drawing	0.00							
130									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg								

14

FEB 17 2016

DAS
13
9-89

Wednesday, February 17, 2016 7:36:27 AM

Item ID: D6020-160

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Material

Start Date: 2/17/2016 **Start Qty:** 14.00 ***14***

Cust Item ID:

Required Date: 9/1/2016 **Req'd Qty:** 14.00 ***1/1***

Customer:

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140 Outsource process - Heat Treat

0.00

140

0.00

Outsource1

Memo

Outsource process - Heat Treat

Issue p/o: _____
Ensure Material certification

150 Receive & Inspect for Damage & Mat'l Certs

0.00

150

0.00

Packaging

Memo

Packaging	Ensure Material certification
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Ensure Material certification

160 QC6- Inspect dimensions to drawing

0.00

160

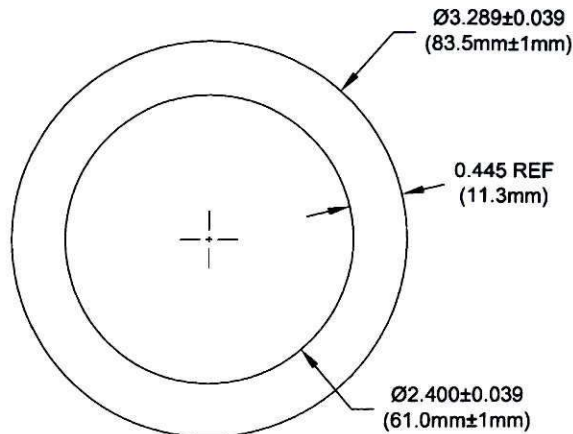
0.00

QC

Memo

Quality Control

SPECIFICATION CONTROL DRAWING



NOTES

1) D6020-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 160" LONG TUBE: D6020-160

2) MATERIAL: 17-4PH SEAMLESS STAINLESS STEEL TUBE PER ASTM A564
Ø3.289 O.D. x Ø2.400 I.D.

HEAT TREAT TO H1025 CONDITION (HRc 34-42):
MIN. ULTIMATE TENSILE STRENGTH = 155 ksi
MIN. YIELD TENSILE STRENGTH = 145 ksi

3) TOLERANCES ARE AS FOLLOWS:

ECCENTRICITY: 15% (+/-0.066" WALL)

LENGTH: XXX +0.188"/-0.000"

STRAIGHTNESS: 0.012" DEVIATION / 12" LENGTH

4) ALL DIMENSIONS ARE IN INCHES

5) TUBE MUST BE PICKLED OR ELECTROPOLISHED TO BE SMOOTH AND FREE FROM SCALE.

6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

W10141824

RELEASED
2013-08-14

REV.	NEW ISSUE	DESCRIPTION	CP	13.04.24
DESIGN			BY	DATE
DRAWN				
CHECKED				
MFG. APPR.				
APPROVED				
DE APPR.				
DATE	13.04.24			

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. REV. A
D6020 SHEET 1 OF 1

TITLE SCALE
CROSSTUBE MATERIAL NTS

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Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO31388

Supplier: TUB002-VU
Tube Hollows International
39 Enterprise Drive Suite 2, 0
Windham, ME 4062 USA
Phone: 207-892-8899
Fax: 207-892-8863

PO No: PO31388
PO Date: 2/17/16
Due Date: 3/28/18
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Phone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Pynt Terms: net 30
Freight Terms:
Special Comments:

Items

Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	D6020- 160P	-	Crosstube Material		Firmed	3/28/18	14 pcs	14 ⁰ pcs 14x	14 pcs	\$3,490.50/pcs	\$48,867.00

Line Item Note: B141824

Grand Total: \$48,867.00

Order Notes

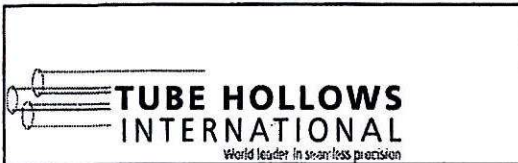
Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Procurement Quality Clauses

A005 RIGHT OF ENTRY
A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION MAINTAINED BY SUPPLIER)
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A016 PERSONNEL QUALIFICATION
A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENT

Plex 10/6/17 1:10 PM dart.lavoie.chantal

PACKING LIST



39 Enterprise Drive # 2 Windham, ME 04062
Phone 207.892.8899 Fax 207.892.8863

Packlist ID: 02759
Date: 6/14/2018
Page: 1

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

			CUSTOMER PO		PAYMENT TERMS		F.O.B.	
			PO31388		Net 30		WINDHAM	
SALES REP ID			SHIPPING METHOD		SHIP DATE		OUR ORDER NUMBER	
EVAN			JOURNEY FREIGHT		6/14/2018		DAR160047	
QUANTITY								
ORD	SHP	BCK	PART ID	DESCRIPTION				

14.00 14.00 0.00 6020-160P

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160" CROSSTUBE

Drawing:

Rev No.:

Unit of Measure: EA

Legacy Part No.:

14 PCS OF TUBE HOLLOW SUPPLIED 17-4 PH MATERIAL.

SERIAL NUMBERS: 29 - 42

REFERENCE THI W/O#: 160304/03

THANK YOU FOR THIS ORDER!

MATERIAL: 17-4 SEAMLESS STAINLESS STEEL TUBE PER ASTM A564, HEAT TREAT TO H1025 CONDITION, (HRc 34-42), MIN. ULTIMATE TENSILE STRENGTH = 155ksi, MIN YIELD TENSILE STRENGTH = 145ksi.

TOLERANCES ARE AS FOLLOWS:

ECCENTRICITY: 15% (+/-0.066" WALL).

LENGTH: XXX +0.188"/0.000".

STRAIGHTNESS: 0.012" DEVIATION / 12" LENGTH.

PROCUREMENT QUALITY CLAUSES AS SHOWN ON PO.

RECEIVED BY: _____

STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6020-160P
Material: 17- 4 PH
Heat #: 267829
Drawing #: D6020 Rev. A
P.O #: PO31388 L/I 4
THI WO#: 160304/03
Qty: 14

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SN's: 29 - 42

The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

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Comments:

Certified By: _____

Travis Ingram, Quality Dept. June 13, 2018

EXTRUSION INSPECTION SHEET



		SIDE A		SIDE B		Measurement unit		Inches		Symbol		"		ULTRA SONIC MEASUREMENTS			
TUBE #	TOTAL LENGTH	DIA		DIA		INSIDE DIA	wall thickness measured w/vern		Strightness at 12" in middle	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4		
DWG		R1	R2	R1	R2												
1	161.34	3.321	3.307	3.304	3.303	2.365	0.465	0.485		N/A	Middle						
2	162.14	3.325	3.324	3.307	3.323	2.366	0.475	0.481		N/A	Middle						
3	161.78	3.3120	3.3130	3.312	3.313	2.370	0.472	0.474		N/A	Middle						
4	161.875	3.311	3.319	3.32	3.319	2.368	0.477	0.479		N/A	Middle						
5										N/A	Middle						
6										N/A	Middle						
7										N/A	Middle						
8										N/A	Middle						
9										N/A	Middle						
10										N/A	Middle						
11										N/A	Middle						
12										N/A	Middle						
13										N/A	Middle						
14										N/A	Middle						
15										N/A	Middle						
16										N/A	Middle						
PART #		P/O#				BATCH #				Notes:							